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TechGrow HS-2

PORTABLE CO_2 METER

Displays temperature and humidity

MANUAL

Software version: 1.00

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TechGrow HS-2
USER MANUAL

Congratulations!
You have just purchased the TechGrow HS-2 Portable CO2 Meter.
The HS-2 is ideal for measuring the CO2 value, temperature and humidity in an area.
The TechGrow HS-2 Portable CO2 Meter uses NDIR (Non-Dispersive Infra Red) technology for high-reliability readings. As well as the CO2 sensor that TechGrow uses for years for all monitoring- and controlling instruments.

Special features:

- Useable in any room.
- Extremely accurate CO2 sensor, produced by SenseAir® Sweden, the leading manufacturer in CO2 measurement.
- The HS-2 measures the CO2 value, temperature and humidity.
- Takes a measurement every second.
- Backlight for working in dark areas.
- CO2 warning alarm.
- Calibration function for CO2.
- Powered by 4 x AA batteries.
- CO2 range: 0-10000 ppm.
- Temperature range: -10° to + 60° C.
- Humidity range 0.1 - 99.9%.
- Accuracy ± 50 ppm or ± 5% of the CO2 measurement (0-2000).
- Size 60 x 170 x 55 mm.
- Includes batteries and instruction manual.
- Includes convenient storage case.

POWER SUPPLY

The HS-2 is powered with 4 x AA batteries. Install the batteries into the battery compartment on the back side and make sure that the batteries make the correct contact. When the battery voltage is low, “LOB” will appear on the LCD display and the HS-2 will beep to indicate that CO2 measurements have failed. Therefore, measurements will not be displayed. Press any key (except “SET”) to stop the beeping. Replace batteries.

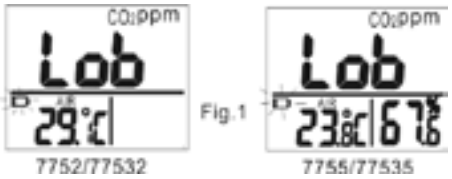

Fig. 1

7752/77532 7755/77535

LCD DISPLAY

Symbols:

-HOLD Shows the last CO2 value, temperature and humidity
-MIN/MAX Minimum/Maximum measurements
-LOB Low battery indicator
-AIR Temperature
°E (C/F) Celsius/Fahrenheit

Keypad:

-SET: On/Off button, enters setup menu.
-CAL/Esc: Exit set up menu.
-CAL/Esc and MODE: Enters CO2 calibration by pushing these buttons simultaneously.
-HOLD: Shows current measurement, switches HOLD function on/off.
-MODE: Activates backlight, selects unit or increases or decreases value in setup.
-DP/WBT: Selects Air-, DP-, WBT temperature display.
-Mnx/AV: Activates MIN/MAX function. Saves and resets MIN/MAX settings. Also shows MIN/MAX values

Operation:

Power ON/OFF

Press “SET” to activate or deactivate the HS-2. When the meter is activated you will hear a short beep. Then, the meter runs a 30 second countdown to warm up. After warm up, the normal mode with the current CO2 value, temperature and humidity will appear on the display.

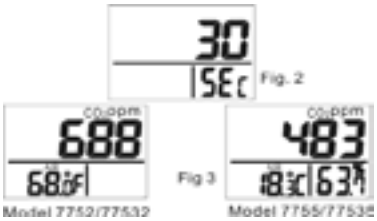

Fig. 2 Fig. 3

Model 7752/77532 Model 7755/77535

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MEASURING CO2:
The HS-2 will start measuring when power is ON and takes a measurement every second.
NOTE: Keep sufficient distance between faces and the CO2 meter because exhaled breath affects the CO2 value. The HS-2 measurements are accurately between 0-2500ppm. From 2500ppm and up, the measurements of the CO2 sensor will be less accurate.

Fig.4

Fig.5

DATA HOLD:
Press “HOLD” to read the measurements. The “HOLD” icon will appear on the left top on the LCD display. All displayed measurements will maintain unchanged. Press “HOLD” again to deactivate this function.

Fig.6

BACKLIGHT
Press “MODE” for longer than 2 seconds to activate/deactivate the backlight function.

ALARM
The HS-2 also features an audible alarm that gives warnings when the CO2 value exceeds the maximum (see P1.0 for Alarm setup). The HS-2 will beep (80 db) when the CO2 value exceeds the set-value and can be switched off by pressing a random key, except “SET”. Restart the meter if the beeping does not stop.

AUTO POWER OFF
The HS-2 will be deactivated automatically after 20 minutes of no activity. To disable this function, press “SET” and “HOLD” simultaneously for 2 seconds to reactivate the HS-2, until “n” appears on the display. NOTE: the Auto sleep function will be stopped during the calibration mode.

SET UP
Press “SET” in normal mode for more than 1 second to access the setup mode. To exit the setup mode, press “CAL/Esc” in P1.0 or P3.0 and the HS-2 will return to normal mode.

P1.0 CO2 ALARM

In the setup mode, “P1.0” and “AL” are shown on the LCD display.

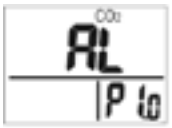

Fig. 10

Fig. 11

Press “Mnx /AV” to enter “P1.1” and to set the CO2 alarm. The current set-value appears blinking on the LCD display. Press “MODE” to increase the value or press DP/WBT to decrease value. With every push on these buttons, the alarm will be increased/decreased with 100 ppm from 100 to 9900 ppm. When the desired alarm value is set, press “Mnx /AV” to save or press “CAL/Esc” to return to “P1.0” saving all settings.

P3.0 TEMPERATURE SCALE (°C OR °F)

Press “MODE” or “DP/WBT” in “P1.0” to enter “P3.0” to adjust the temperature scale. Press “Mnx/ AV” in front of “P3.1” with the blinking °C bottom left of the LCD display (to switch between °C or °F, press “MODE” or “DP/WBT”). Next, press “Mnx/AV” to save or press “CAL/Esc” to return to “P3.0” without saving.

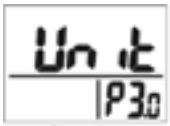

Fig. 12

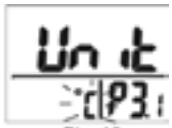

Fig. 13

CO2 CALIBRATION

The HS-2 is calibrated at 400ppm CO2 value at the factory.
Only calibrate the sensor if you suspect a deviation. Our experience has shown that the SenseAir® sensors that we use can function for two years without calibration, easily.
The sensors are calibrated from the factory with the highest accuracy, but it may occur that after one year the sensor shows a deviation and has to be calibrated again

WARNING:

Do NOT calibrate the HS-2 in an area of which the CO2 value is unknown. Otherwise, the meter will be calibrated automatically as 400ppm, which will lead to inaccurate measurements. It is advised to conduct a manual calibration in outdoor air when the weather is sunny.

+Place the HS-2 on the calibration site.
+Activate the HS-2 and press “CAL/Esc” and “MODE” simultaneously to enter the CO2 calibration menu.
+400ppm and “CAL” are now blinking on the LCD display while the calibration is busy.
+Wait for 5 minutes until the blinking stops and the calibration is finished and returns to normal mode.
To stop the calibration, you can deactivate the HS-2 at any moment.
NOTE: make sure that the batteries are full during calibration to prevent interruption or failed calibration.

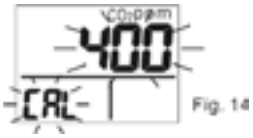

Fig. 14

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Problem solving:

-The meter does not activate:
Press “SET” for longer than 3 seconds and try to reactivate the HS-2. Also, check if the batteries are placed correctly.

-Slow reaction:
Check if the air way on the back of the meter are not blocked.

-Errors:
E01: CO2 sensor is damaged.
E02: The value is under range (probably due to incorrect calibration).
E03: The value is above range.
E07: Too low voltage to measure CO2. Replace batteries.
E17: Retry calibration.
E31: Temperature sensor is damaged or defective.
E34: Humidity sensor is damaged or defective.

Notes

• Compact and accurate portable handmeter
• Measures CO_2 value and temperature
• CO_2 warning alarm
• Calibration function for CO_2
Portable CO_2 Meter HS-1

• Placeable in any room
• Works using standard text messages
• Manageable by up to 3 different people
• Up to 8 different contacts for alarms
Alarm detector AM-1

• Plug & Play
• Extremely accurate CO_2 sensor
• Smallest of its kind
• Easy to use
CO_2 Controller T-Micro

• Back-up for up to 24 hours
• Works with any 12 Volt car battery
• Installed in a couple of minutes
• Optional: Mobile phone feedback module
Powerbox PB-600